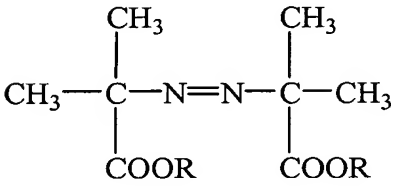
REMARKS

Prior to discussing the prior art rejections, which are traversed, Applicants note that the Examiner has improperly interpreted the claims. Sole independent Claim 1 reads as follows:

> A process for manufacturing a methacrylate (co)polymer comprising conducting polymerization while feeding a monomer (mixture) containing at least 90 wt% in total of at least one methacrylate monomer and a radical polymerization initiator represented by formula (II) into a reactor and for an average residence time of 2 to 6 hours, where an initiator concentration and a polymerization temperature satisfy a relationship represented by equations (1) to (4) and the polymerization temperature is not less than 110°C and not more than 160°C;
>
> $\ln(A) \leqq 105.4 - 45126/B$ (1)
>
> $\ln(A) \leqq 2545.2/B - 15.82$ (2)
>
> $\ln(A) \geqq 225.9 - 102168.8/B$ (3)
>
> $\ln(A) \geqq 1300.0/B - 15.74$ (4)
>
> wherein A is an initiator concentration (a molar ratio of the initiator / the monomer); B is a polymerization temperature (°K); and ln is a symbol for a natural logarithm;



(II)

> wherein R is alkyl or fluoroalkyl.

As indicated, the initiator concentration (A) and polymerization temperature (B) must satisfy **a relationship represented by equations (1) to (4)**. It is clear that the relationship is represented by **all** of these four equations, since any other interpretation makes no sense. For example, if only one of the equations had to be satisfied, then for any polymerization temperature B, the values of the initiator concentration A would be contradictory. Similarly, for any initiator concentration A, the polymerization temperatures B would be contradictory.

It is clear that the Examiner has interpreted the claims incorrectly, since, as indicated at paragraph 2 of the Office Action, the Examiner believes that if equation (1) alone is satisfied, the claim is met.

As described in the specification at page 12, lines 5-9, Fig. 1 herein graphically shows the relationship represented by equations (1) to (4). Fig. 1 shows that A and B are selected so that they are within the hatched range delimited by the four lines in the graph, each line representing one of the above equations (1) to (4).

Clearly, the Examiner's interpretation of the claims is **not** the broadest reasonable interpretation consistent with the specification.

The rejection of Claims 1 and 3-9 under 35 U.S.C. § 102(b) as anticipated by U.S. 5,728,793 (Kumagai et al), is respectfully traversed. Kumagai et al discloses a process for the production of methacrylate polymers by bulk polymerization at a polymerization temperature of 120-180°C with an average residence time of 15 minutes to 2 hours using a radical initiator having a half-life of not more than one minute at the polymerization temperature at a concentration which is equal to C (mol/100 g monomer) satisfying the following relation: $1.1\times10^{-4}\cdot\exp(0.019T)<C\cdot\Theta<3\times10^{-8}\cdot\exp(0.079T)$, wherein Θ represents average residence time (minute) and T represents polymerization temperature (°C) (column 3, lines 12-40). As the radical initiator therein, Kumagai et al discloses various azo and peroxide compounds (column 7, lines 18-43). Thus, Kumagai et al recognizes no relationship, and imparts no importance to, employing an azo-type initiator having a molecular end structure, which is the same as or similar to the methacrylate monomer to be polymerized, as required by the present claims. When such a structural relationship exists, a polymer having improved optical properties is obtained, a benefit recognized by Applicants but not Kumagai et al. Indeed, the only azo initiator used in the examples of Kumagai et al is azobisisobutyronitrile (AIBN), used in Examples 1 and 3, which does **not** have a molecular

end structure even similar to the methacrylate monomer used therein. Only with the present disclosure as a guide would one select an average residence time of the maximum of 2 hours in Kumagai et al, and, for example, dimethyl 2,2'-azobis(2-methylpropionate) of Kumagai et al (column 7, lines 22-23) as the radical initiator therein, and even if this residence time and radical initiator were chosen, one skilled in the art would not know to operate within, in effect, the above-discussed hatched range of Fig. 1 herein.

For all the above reasons, it is respectfully requested that the rejection over Kumagai et al be withdrawn.

The rejection of Claims 11, 12 and 13 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a) as unpatentable over, U.S. 5,287,222 (Uozu et al), is respectfully traversed. Claims 11 and 12 depend on Claim 5, which claim depends on Claim 1; Claims 13 depends on Claim 1. Therefore, the rejected claims contain all the limitations of Claim 1. Uozu et al is drawn to graded index type plastic optical transmission mediums and manufacturing methods thereof. However, Uozu et al disclose and suggest nothing with regard to manufacturing a methacrylate (co)polymer. Accordingly, it is respectfully requested that the rejection over Uozu et al be withdrawn.

The objection to the specification is now moot in view of the above-discussed amendment. Accordingly, it is respectfully requested that the objection be withdrawn.

Applicants gratefully acknowledge the Examiner's indication of allowability of Claims 2 and 5. Nevertheless, Applicants respectfully submit that all of the presently-pending claims in this application are in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

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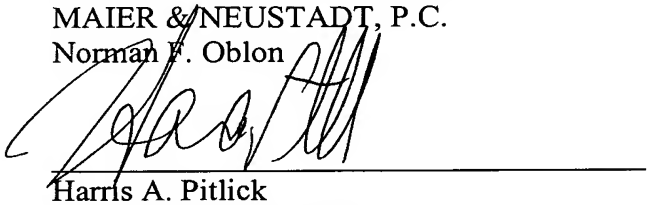

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